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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/816,529	03/23/2001	Paul G. Clemmer	30-4336 (4510)	8030

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Synnestvedt & Lechner LLP
2600 Aramark Tower
1101 Market Street
Philadelphia, PA 19107-2950

EXAMINER

MANOHARAN, VIRGINIA

ART UNIT PAPER NUMBER

1764

DATE MAILED: 11/29/2002

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/816,529

Applicant(s)

CLEMMER, PAUL G.

Examiner

Virginia Manoharan

Art Unit

1764

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 August 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) 12-19 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-11 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Applicant's election of Group I, claims 1-11 in Paper No. 7 is acknowledged. Because applicant did not distinctly and specifically point out the supposed errors in the restriction requirement, the election has been treated as an election without traverse (MPEP § 818.03(a)).

The abstract of the disclosure is objected to because of the inclusion of legal phraseology often used in Patent claims. For example: "comprising," recited at line 2. Correction is required. See MPEP § 608.01(b).

The specification has not been checked to the extent necessary to determine the presence of all possible errors e.g. typographical, grammar, idiomatic, syntax and etc. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claims 1-11 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- a. It is unclear where the purified difluoromethane is recovered, in the overhead or at the bottoms of the distilling process ?
- b. The inconsistent used of terminology in the claims is improper. For example: "at least one impurity" recited in lines 1 and 2 as opposed to "said impurity" recited in the last line of claim 1. Reciting the latter (and its subsequent occurrences in the claims) as—said at least one impurity—would overcome this rejection. See also claims 2, 3 and 4.

Note also the "at least one extractive agent stream" as opposed to 'said extractive agent stream" in claim 2. The latter should be recited as—said at least one extractive agent stream--.

c. In claims 8-10, using the abbreviated HFC -32 without reciting first the compound difluoromethane is improper.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO '660 in view of Coulson et al publication and Yokoyama et al.

The WO '660 reference discloses substantially the process as claimed. See e.g., the claims at pages 23-24. The process of the WO '660 differs from the claimed invention that claim 1, for example, recites the dichloromethane as the extractive agent. The WO '660 uses as the extractive agents compounds including e.g., dichloroethane and trichloroethane. See page 12.

Yokoyama et al teaches that the use of dichloroethane as the extractant in the purification of difluoromethane is known in the art.

To substitute Yokoyama's extractive agent to WO '660 agents above would have been obvious to one of ordinary skill in the art inasmuch as the dichloroethane is a known homologue of dichloromethane and trichloroethane. Furthermore, substituting one over the other would have been obvious to an artisan in view of what has been

documented in the art. Coulson for example, teaches that "use may be made of the fact that, when two compounds show deviations from Raoult's Law, then one of these compounds show the same type of deviation with any member of the homologous series of the other component".

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- a. WO '670 discloses a process wherein a heated recycle stream process reactant is fed into the reactor.
- b. Miller discloses an extractive distillation process for separating difluoromethane.
- c. Cerri et al discloses a process for separating difluoromethane.

Any inquiry concerning this communication from the examiner should be directed to V. Manoharan whose telephone number is (703) 308-3844. The examiner can generally be reached on Tuesday--Friday from 7:30 a.m. to 6:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Glenn Caldarola can be reached on (703) 308-6824. The fax phone numbers for the organization where this application is assigned are (703) 872-9311 for regular communications and (703) 308-0651 for After Final communications.

Any inquiry of a general nature or relating to the status of this application should be directed to the receptionist whose telephone number is (703) 308-0661.

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V. Manoharan/dh
November 19, 2002

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